



15619D.ST25.txt
SEQUENCE LISTING

<110> Yamamoto, Harry Y
Bugos, Robert C
Rockholm, David C

<120> PLANT VDE GENES AND METHODS RELATED THERETO

<130> 15619/03/US

<140> US 09/075,375
<141> 1998-05-07

<150> US 08/747,574
<151> 1996-11-07

<150> PCT/US96/18291
<151> 1996-11-07

<150> US 60/023,502
<151> 1996-08-06

<150> US 60/006,315
<151> 1995-11-07

<160> 9

<170> PatentIn version 3.2

<210> 1
<211> 1981
<212> DNA
<213> Lactuca sativa

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cacttcgaac gctacaatgt ttgaaaaaaag acgcagatTT tacaagacg gagaagataa 180
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<212> PRT
<213> Lactuca sativa

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Asn Leu Tyr Ala Arg Ser Pro Cys Asn Glu Arg Phe His Arg Ser Gly
20 25 30

Gln Pro Pro Thr Asn Ile Ile Met Met Lys Ile Arg Ser Asn Asn Gly
35 40 45

Tyr Phe Asn Ser Phe Arg Leu Phe Thr Ser Tyr Lys Thr Ser Ser Phe
50 55 60

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Ser Asp Ser Ser His Cys Lys Asp Lys Ser Gln Ile Cys Ser Ile Asp
65 70 75 80

Thr Ser Phe Glu Glu Ile Gln Arg Phe Asp Leu Lys Arg Gly Met Thr
85 90 95

Leu Ile Leu Glu Lys Gln Trp Arg Gln Phe Ile Gln Leu Ala Ile Val
100 105 110

Leu Val Cys Thr Phe Val Ile Val Pro Arg Val Asp Ala Val Asp Ala
115 120 125

Leu Lys Thr Cys Ala Cys Leu Leu Lys Glu Cys Arg Ile Glu Leu Ala
130 135 140

Lys Cys Ile Ala Asn Pro Ser Cys Ala Ala Asn Val Ala Cys Leu Gln
145 150 155 160

Thr Cys Asn Asn Arg Pro Asp Glu Thr Glu Cys Gln Ile Lys Cys Gly
165 170 175

Asp Leu Phe Glu Asn Ser Val Val Asp Gln Phe Asn Glu Cys Ala Val
180 185 190

Ser Arg Lys Lys Cys Val Pro Arg Lys Ser Asp Val Gly Glu Phe Pro
195 200 205

Val Pro Asp Arg Asn Ala Val Val Gln Asn Phe Asn Met Lys Asp Phe
210 215 220

Ser Gly Lys Trp Tyr Ile Thr Ser Gly Leu Asn Pro Thr Phe Asp Ala
225 230 235 240

Phe Asp Cys Gln Leu His Glu Phe His Met Glu Asn Asp Lys Leu Val
245 250 255

Gly Asn Leu Thr Trp Arg Ile Lys Thr Leu Asp Gly Gly Phe Phe Thr
260 265 270

Arg Ser Ala Val Gln Thr Phe Val Gln Asp Pro Asp Leu Pro Gly Ala
275 280 285

Leu Tyr Asn His Asp Asn Glu Phe Leu His Tyr Gln Asp Asp Trp Tyr
290 295 300

Ile Leu Ser Ser Gln Ile Glu Asn Lys Pro Asp Asp Tyr Ile Phe Val
305 310 315 320

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Tyr Tyr Arg Gly Arg Asn Asp Ala Trp Asp Gly Tyr Gly Gly Ser Val
325 330 335

Ile Tyr Thr Arg Ser Pro Thr Leu Pro Glu Ser Ile Ile Pro Asn Leu
340 345 350

Gln Lys Ala Ala Lys Ser Val Gly Arg Asp Phe Asn Asn Phe Ile Thr
355 360 365

Thr Asp Asn Ser Cys Gly Pro Glu Pro Pro Leu Val Glu Arg Leu Glu
370 375 380

Lys Thr Ala Glu Glu Gly Glu Lys Leu Leu Ile Lys Glu Ala Val Glu
385 390 395 400

Ile Glu Glu Glu Val Glu Lys Glu Val Glu Lys Val Arg Asp Thr Glu
405 410 415

Met Thr Leu Phe Gln Arg Leu Leu Glu Gly Phe Lys Glu Leu Gln Gln
420 425 430

Asp Glu Glu Asn Phe Val Arg Glu Leu Ser Lys Glu Glu Lys Glu Ile
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Arg Ala Leu Pro Ile Arg Lys Leu Arg
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<210> 3
<211> 1589

<212> DNA

<213> Nicotiana tabacum

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tacctcgtaa atctgatgtt ggtgactttc ctgtaccta tcccagtgtt cttgtccaga	720
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aagttggcg tgattcaac acattcataa aaacagacaa tacatgtggc cctgaacctc	1200
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<212> PRT

<213> Nicotiana tabacum

<400> 4

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20 25 30

Gly Trp Glu Asp Tyr Phe Gly Ser Ile Val Val Ala Lys Ile Cys Ser
35 40 45

Ser Arg Arg Ile Pro Arg Tyr Phe Arg Lys Ser Pro Arg Ile Cys Cys
50 55 60

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Gly Leu Asp Ser Arg Gly Leu Gln Leu Phe Ser His Gly Lys His Asn
65 70 75 80

Leu Ser Pro Ala His Ser Ile Asn Gln Asn Val Pro Lys Gly Asn Ser
85 90 95

Gly Cys Lys Phe Pro Lys Asp Val Ala Leu Met Val Trp Glu Lys Trp
100 105 110

Gly Gln Phe Ala Lys Thr Ala Ile Val Ala Ile Phe Ile Leu Ser Val
115 120 125

Ala Ser Lys Ala Asp Ala Val Asp Ala Leu Lys Thr Cys Thr Cys Leu
130 135 140

Leu Lys Glu Cys Arg Leu Glu Leu Ala Lys Cys Ile Ser Asn Pro Ala
145 150 155 160

Cys Ala Ala Asn Val Ala Cys Leu Gln Thr Cys Asn Asn Arg Pro Asp
165 170 175

Glu Thr Glu Cys Gln Ile Lys Cys Gly Asp Leu Phe Glu Asn Ser Val
180 185 190

Val Asp Glu Phe Asn Glu Cys Ala Val Ser Arg Lys Lys Cys Val Pro
195 200 205

Arg Lys Ser Asp Val Gly Asp Phe Pro Val Pro Asp Pro Ser Val Leu
210 215 220

Val Gln Lys Phe Asp Met Lys Asp Phe Ser Gly Lys Trp Phe Ile Thr
225 230 235 240

Arg Gly Leu Asn Pro Thr Phe Asp Ala Phe Asp Cys Gln Leu His Glu
245 250 255

Phe His Thr Glu Glu Asn Lys Leu Val Gly Asn Leu Ser Trp Arg Ile
260 265 270

Arg Thr Pro Asp Gly Gly Phe Phe Thr Arg Ser Ala Val Gln Lys Phe
275 280 285

Val Gln Asp Pro Lys Tyr Pro Gly Ile Leu Tyr Asn His Asp Asn Glu
290 295 300

Tyr Leu Leu Tyr Gln Asp Asp Trp Tyr Ile Leu Ser Ser Lys Val Glu
305 310 315 320

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Asn Ser Pro Glu Asp Tyr Ile Phe Val Tyr Tyr Lys Gly Arg Asn Asp
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Ala Trp Asp Gly Tyr Gly Ser Val Leu Tyr Thr Arg Ser Ala Val
340 345 350

Leu Pro Glu Ser Ile Ile Pro Glu Leu Gln Thr Ala Ala Gln Lys Val
355 360 365

Gly Arg Asp Phe Asn Thr Phe Ile Lys Thr Asp Asn Thr Cys Gly Pro
370 375 380

Glu Pro Pro Leu Val Glu Arg Leu Glu Lys Lys Val Glu Glu Gly Glu
385 390 395 400

Arg Thr Ile Ile Lys Glu Val Glu Glu Ile Glu Glu Glu Val Glu Lys
405 410 415

Val Arg Asp Lys Glu Val Thr Leu Phe Ser Lys Leu Phe Glu Gly Phe
420 425 430

Lys Glu Leu Gln Arg Asp Glu Glu Asn Phe Leu Arg Glu Leu Ser Lys
435 440 445

Glu Glu Met Asp Val Leu Asp Gly Leu Lys Met Glu Ala Thr Glu Val
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<213> Arabidopsis thaliana

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360
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480

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tatacacgag	aagttctgta	ttacccaata	gcattatacc	agaactcgaa	aaagcagcaa	1080
aaagcatagg	cagagacttc	agcacattca	ttagaacgga	taacacatgt	ggtcctgaac	1140
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<213> Arabidopsis thaliana

<400> 6

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35 40 45

Ser Ala Asp Leu Arg Thr Thr Gly Gly Arg Ser Ser Arg Pro Leu Ser
50 55 60

Ala Phe Arg Ser Gly Phe Ser Lys Gly Ile Phe Asp Ile Val Pro Leu
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Pro Ser Lys Asn Glu Leu Lys Glu Leu Thr Ala Pro Leu Leu Leu Lys
85 90 95

Leu Val Gly Val Leu Ala Cys Ala Phe Leu Ile Val Pro Ser Ala Asp
100 105 110

Ala Val Asp Ala Leu Lys Thr Cys Ala Cys Leu Leu Lys Gly Cys Arg
115 120 125

Ile Glu Leu Ala Lys Cys Ile Ala Asn Pro Ala Cys Ala Ala Asn Val
130 135 140

Ala Cys Leu Gln Thr Cys Asn Asn Arg Pro Asp Glu Thr Glu Cys Gln
145 150 155 160

Ile Lys Cys Gly Asp Leu Phe Glu Asn Ser Val Val Asp Glu Phe Asn
165 170 175

Glu Cys Ala Val Ser Arg Lys Lys Cys Val Pro Arg Lys Ser Asp Leu
180 185 190

Gly Glu Phe Pro Ala Pro Asp Pro Ser Val Leu Val Gln Asn Phe Asn
195 200 205

Ile Ser Asp Phe Asn Gly Lys Trp Tyr Ile Thr Ser Gly Leu Asn Pro
210 215 220

Thr Phe Asp Ala Phe Asp Cys Gln Leu His Glu Phe His Thr Glu Gly
225 230 235 240

Asp Asn Lys Leu Val Gly Asn Ile Ser Trp Arg Ile Lys Thr Leu Asp
245 250 255

Ser Gly Phe Phe Thr Arg Ser Ala Val Gln Lys Phe Val Gln Asp Pro
260 265 270

Asn Gln Pro Gly Val Leu Tyr Asn His Asp Asn Glu Tyr Leu His Tyr
275 280 285

Gln Asp Asp Trp Tyr Ile Leu Ser Ser Lys Ile Glu Asn Lys Pro Glu
290 295 300

Asp Tyr Ile Phe Val Tyr Tyr Arg Gly Arg Asn Asp Ala Trp Asp Gly
305 310 315 320

Tyr Gly Gly Ala Val Val Tyr Thr Arg Ser Ser Val Leu Pro Asn Ser
325 330 335

15619D.ST25.txt

Ile Ile Pro Glu Leu Glu Lys Ala Ala Lys Ser Ile Gly Arg Asp Phe
340 345 350

Ser Thr Phe Ile Arg Thr Asp Asn Thr Cys Gly Pro Glu Pro Ala Leu
355 360 365

Val Glu Arg Ile Glu Lys Thr Val Glu Glu Gly Glu Arg Ile Ile Val
370 375 380

Lys Glu Val Glu Glu Ile Glu Glu Glu Val Glu Lys Glu Val Glu Lys
385 390 395 400

Val Gly Arg Thr Glu Met Thr Leu Phe Gln Arg Leu Ala Glu Gly Phe
405 410 415

Asn Glu Leu Lys Gln Asp Glu Glu Asn Phe Val Arg Glu Leu Ser Lys
420 425 430

Glu Glu Met Glu Phe Leu Asp Glu Ile Lys Met Glu Ala Ser Glu Val
435 440 445

Glu Lys Leu Phe Gly Lys Ala Leu Pro Ile Arg Lys Val Arg
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<211> 12

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<213> Artificial

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<223> synthetic peptide derived from the N-terminus of lettuce vde

<220>

<221> MISC_FEATURE

<222> (1)..(12)

<223> Synthetic peptide derived from the N-terminus of lettuce vde

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<210> 8

<211> 20

<212> DNA

<213> Artificial

<220>

<223> synthetic oligonucleotide

<400> 8

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20

<210> 9
<211> 18
<212> DNA
<213> Artificial

<220>
<223> synthetic oligonucleotide

<400> 9
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18